DOCUMENT RESUME

ED 280 640 RC 016 112

AUTHOR Dannenbring, Gary L.; Krueger, Frederick H.
TITLE The Arrowhead Student Information System: Managing Information on Special Education Referrals in a Rural Environment.
PUB DATE Oct 86
NOTE 8p.; Paper presented at the Annual Conference of the National Rural and Small Schools Consortium (Bellingham, WA, October 7-10, 1986).
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Computer Oriented Programs; *Computer Uses in Education; Design Requirements; Educational Diagnosis; *Handicap Identification; Information Centers; Information Needs; *Management Information Systems; *Organizational Communication; *Program Design; Program Development; Referral; Regional Programs; Rural Education; Rural Schools; *Special Education; Staff Role
IDENTIFIERS Iowa

ABSTRACT

A computerized referral management system, the Arrowhead Student Information System, has enhanced communication among special education staff members in rural Iowa. The system serves a 45-district intermediate level service unit which identifies and serves children from birth to 21 years who require special education from a student and preschool population of approximately 40,500. Information needs which prompted establishment of the system include difficulties in coordinating teacher referrals; evaluation by several staff members; setting up appropriate programs for students; requirements for gathering information needed at federal, state, and local levels; and program evaluation and research. Factors considered in designing the information system include use of ordinary English on regular reports; reduction of codes; usefulness to all staff, not just administrators; staff design and modification of the system to accommodate actual practices and procedures; selection of one in-house person to coordinate system design and programming; and financial considerations in selection of hardware and software. The Arrowhead Student Information System consists of an IBM PC-AT computer as non-dedicated file server and several IBM PC-XT computers as workstations. Software developed using the KnowledgeMan data management package consists of student information, referral management, program and support service data, discipline-specific, and report-generating databases. (LFL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED280640

The Arrowhead Student Information System: Managing Information on Special Education Referrals in a Rural Environment

By

Gary L. Dannenbring
Special Education Division
Arrowhead Area Education Agency
1235 5th Ave. South
Fort Dodge, IA 50501

and

Frederick H. Krueger
Special Education Division
Arrowhead Area Education Agency
1235th Ave. South
Fort Dodge, IA 50501

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Gary L. Dannenbring

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.
☑ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Paper presented at the Annual Conference of the National Rural and Small Schools Consortium (Bellingham, WA, October 7-10, 1986).

RC016112

BEST COPY AVAILABLE

Gary L. Dannenbring and Frederick H. Krueger
Special Education Division
Arrowhead Area Education Agency
1235 5th Ave. South
Fort Dodge, IA 50501

THE ARROWHEAD STUDENT INFORMATION SYSTEM: MANAGING INFORMATION ON SPECIAL EDUCATION REFERRALS IN A RURAL ENVIRONMENT

The AEA Concept

Iowa reorganized its intermediate educational service units (between state and local school districts) from 99 county to 15 multi-county units in 1975. These regional, intermediate level service units are called Area Education Agencies (AEA's).

Iowa's AEA's have both regulatory and service roles. The basic premise for the agencies' existence is that a sound educational program should be available to all children. They contribute to that goal by offering programs and services that individual school districts might not be able to provide as efficiently, or at all. The AEA's were established to:

1. Provide an effective and economical means of identifying and serving children from birth to 21 years of age who require special education.
2. Provide a media center containing a lending library of print and non-print materials, a professional library, a curriculum laboratory, media production capability, and a means of delivering materials.
3. Provide other services such as inservice training for local school district employees, educational data processing, research, and demonstration projects and models.

The AEA's evolved to contain three major divisions: Special Education, Media Services and Educational Services. The Special Education Division comprises approximately 80% of the AEA's budget and employs the largest number of personnel. While some AEA's have programs of instructional services, all provide support services.

Special Education support personnel are employed by the AEA and assigned to local school districts, to assist them in identifying and evaluating handicapped students from birth to age 21. A team of AEA personnel, along with local school staff and parents, then determines the best plan for teaching each child, including what materials and techniques might be most effective. Members of the team may include such AEA staff members as a school psychologist, speech/language clinician, audiologist, school social worker, and special education consultant. Special Education Divisions also include a preschool department which has staff members specially trained to work with preschool handicapped children.

Arrowhead AEA covers an area of 5,000 square miles and includes 45 local districts with a public school enrollment of 28,000, non-public enrollment of 2,500, and approximately 10,000 preschool children. 3,165 children were identified as handicapped for the 1985 Federal count. Arrowhead AEA maintains a special education office in the county seat of each of the nine counties it serves. Working out of one of these offices, special education support personnel are assigned to local school districts on a student population basis. The number of support staff in a specific department (i.e., speech/language clinician), divided into the student population to be served, usually dictates the geographic area to be covered by a single individual. Individual allowance is made for sparsity and density of school populations, the department represented (speech, psychology, OT/PT, etc.), and particular concentrations of handicapped students.

Managing Referrals in a Rural Environment

Unless identified in a screening process, most student services begin with a referral from the regular classroom teacher. Managing the referral through the comprehensive evaluation process can be a logistical nightmare. Because of the large geographical area to be serviced, staff members assigned to a particular case may come from different offices, and are rarely in the school at the same time. Coordinating the evaluation, knowing when each staff member has completed their own portion of the evaluation, and setting up and conducting a staffing to determine an appropriate program for a student, are all things that require a good communication system.

Other Informational Needs

Gathering information needed at the federal, state, or local level also poses logistical problems in a rural environment. In addition to federal and state data requirements, AEA Supervisors need data specific to their own disciplines (psychology, school social work, etc.), as well as accurate information on the actual workloads of their staff. The Special Education Director, who is responsible for the overall quality of all of the special education programs in the area, requires a variety of reports. Finally, various kinds of data are often needed for research and program evaluation purposes. Thus, any information system must be flexible enough to cover these various needs for information, and allow this to be done over a large geographical area and a number of independent school districts.

General Design Considerations for an Information System

In designing an information system, a number of factors need to be considered. Obviously, the need for information by various people, which has already been mentioned, is of prime consideration. Sometimes, however, more information than necessary is kept in computer databases, simply because the technology allows it. In addition, the change to a computerized system often forces staff into making major changes in procedures they normally follow, methods of writing reports, etc. They often have to learn and use extensive lists of codes and adapt to new and complex computer forms. These are all problems that should be avoided, and have largely been avoided in the Arrowhead Student Information System (ASIS). Staff members communicate information by writing that information in ordinary English on the regular reports they

receive. Very few codes need to be learned by the staff members.

Probably one of the most important considerations is that the system be useful to all of the staff, not just administrators. The initial design of ASIS was to assist the staff members in the referral process. The first reports were designed for the staff; administrator reports were designed later. Further, much of the initial design and early modifications came from staff members rather than administrators. With such a procedure, staff members will feel some "ownership" of the system, will readily see the benefits of the system, and thus will use it. Probably one of the worst errors that can be made is to "force" an unwilling staff to use a new system of maintaining information. Such a system only results in unhappiness, frustration, or even outright hostility by the staff, and the data in the system may be incomplete and only marginally accurate.

Computer Personnel. The development of a system designed for the specific needs of an agency virtually requires the services of an "in-house" person for system design and programming. The alternatives, which might include the purchase of a commercial package, or hiring an outside consultant to develop the system, may result in a system which does not meet the needs of the educational agency, forces extensive changes in procedures, or may be difficult or slow to modify at a later date.

Because of the availability of high quality software development tools, the "in-house" individual who designs the system need not have an extensive background in programming (although some experience is probably necessary). In fact, it may be useful if that individual has a background in special education or some related area, which would make them more aware of the problems that need to be addressed by the system.

Hardware and Software. A major consideration in making hardware and software decisions is obviously financial. Since a large amount of money is often not available in local districts or intermediate-level educational agencies (especially in rural areas), the initial choice of hardware will often be a single-user microcomputer. In such a situation, the possibility of future expansion (perhaps to a network) needs to be considered.

Assuming that the system is to be developed in-house on a microcomputer, it is important that a good database software development package be used; examples would include KnowledgeMan™, R:Base™, and dBASE III.™ The advantage of this over programming in a language such as BASIC, Pascal, COBOL, etc., is the speed of system development, the ease of making later modifications, and the possibility that non-programmers may learn to use the system to develop their own ad-hoc reports.

At Arrowhead AEA, the initial ASIS system ran on a single IBM PC-XT™ computer. This has recently been expanded to a Novell Netware/SM™ network consisting of an IBM PC-AT™ computer as a non-dedicated file server and workstation, with several IBM PC-XT computers as additional workstations. The software was developed using the KnowledgeMan data management package. The data are accessed through procedures written in K-Man's programming language (a high-level structured language). All procedures are menu driven, simplifying the operator's task.

The system consists of a number of related databases. The "main" database contains basic information on the student which tends to remain fairly constant (name, demographic information, etc.). In addition, there are referral databases which contain information specific to a given referral. Records in these files are related to the main file through the Student ID number, so that information can be stored efficiently in a non-redundant fashion. Other related files include placement and programming data, school psychologist interventions, school social worker interventions, and preschool child change data. Through this design, discipline - specific information can easily be added and related to all of the information on the child.

ASIS Modules

Referral Management. The first module of the system that was developed, and the main focus of the system, is referral management. This section was designed to manage the referral from the time it is received at the AEA until the staffing is held. When the referral arrives, the information is entered by the computer operator, and a record of the case is printed by the computer, along with a summary of any previous referrals or work done on the student. This information goes to the Friday meeting of the referral management team (there are a total of 13 teams in eight of the Arrowhead AEA offices). Each team receives a complete list of all cases pending. Each staff member also receives two reports each week. One (a Case Manager report) lists all cases they are managing, including all other staff members assigned to the case and areas of evaluation that they have not yet completed. The second report lists all students for whom that staff member still has areas to evaluate, regardless of whether or not the person is managing the case.

Information is updated in the system simply by having the staff indicate any changes that have occurred (areas of evaluation completed, changes in staff assigned to a case, etc.) on the reports themselves, and return them to the computer operator. Thus, no special forms are needed, and all communication with the computer operator is in ordinary English.

Rather than tackle the complexities and difficulties of electronic communication with the satellite offices, all ASIS information is communicated with paper records. Each supervisor attends a Friday team meeting, taking with them new referral case records and team reports, and returning with all updated reports. The new information is entered into the computer over the weekend, new reports are printed for all staff members, and these are mailed to the offices early the next week. Thus, there is only a 2 - 3 working day lag between the time the updated reports are turned in, and the time the staff receive their new reports.

Program and Support Service Data. If a student is eligible for special education services, a record of those services is entered into the computer. Staff members providing regular support services for students receive a list of these students along with their weekly Case Manager reports.

Discipline - Specific Modules. Separate modules have been developed to keep basic information on psychological interventions, school social worker interventions, and pre-school data. In general, the procedure followed is to

maintain only the basic information on the database. Narrative information, such as a description of a psychological intervention, is kept only on word processing files and paper records, not as a part of ASIS.

Other Reports. Besides reports to the staff members, staff and their supervisors receive cumulative reports several times a year that summarize all work completed. Reports are also sent to secretaries, so that they will be aware of all of the different reports they will be receiving for typing. School principals receive regular reports on all cases not yet completed. Finally, various reports are provided for the Director of Special Education.

Summary and Conclusions

Prior to the implementation of a computerized referral management system, a great amount of time was spent by the Special Education staff trying to communicate information to each other on how they were progressing on a comprehensive evaluation. The Arrowhead Student Information System has enhanced the communication between staff members serving this rural area of Iowa. Less staff time is required to coordinate evaluations, share information and set up staffings. The staff members feel that they are more productive and able to devote more time to direct service of students. Because of the relational database design of the system, additional modules have been added to keep other information on the students. Finally, all of this information is available for a wide variety of reports needed for federal, state, and local data requirements, along with various research and program evaluation projects.

FOOTNOTES

KnowledgeMan is a trademark of Micro Data Base Systems; R:Base is a trademark of Microrim; dBASE III is a trademark of Ashton-Tate; IBM PC-AT and IBM PC-XT are trademarks of International Business Machines Corp.; Novell Netware/SM is a trademark of Novell, Inc.